



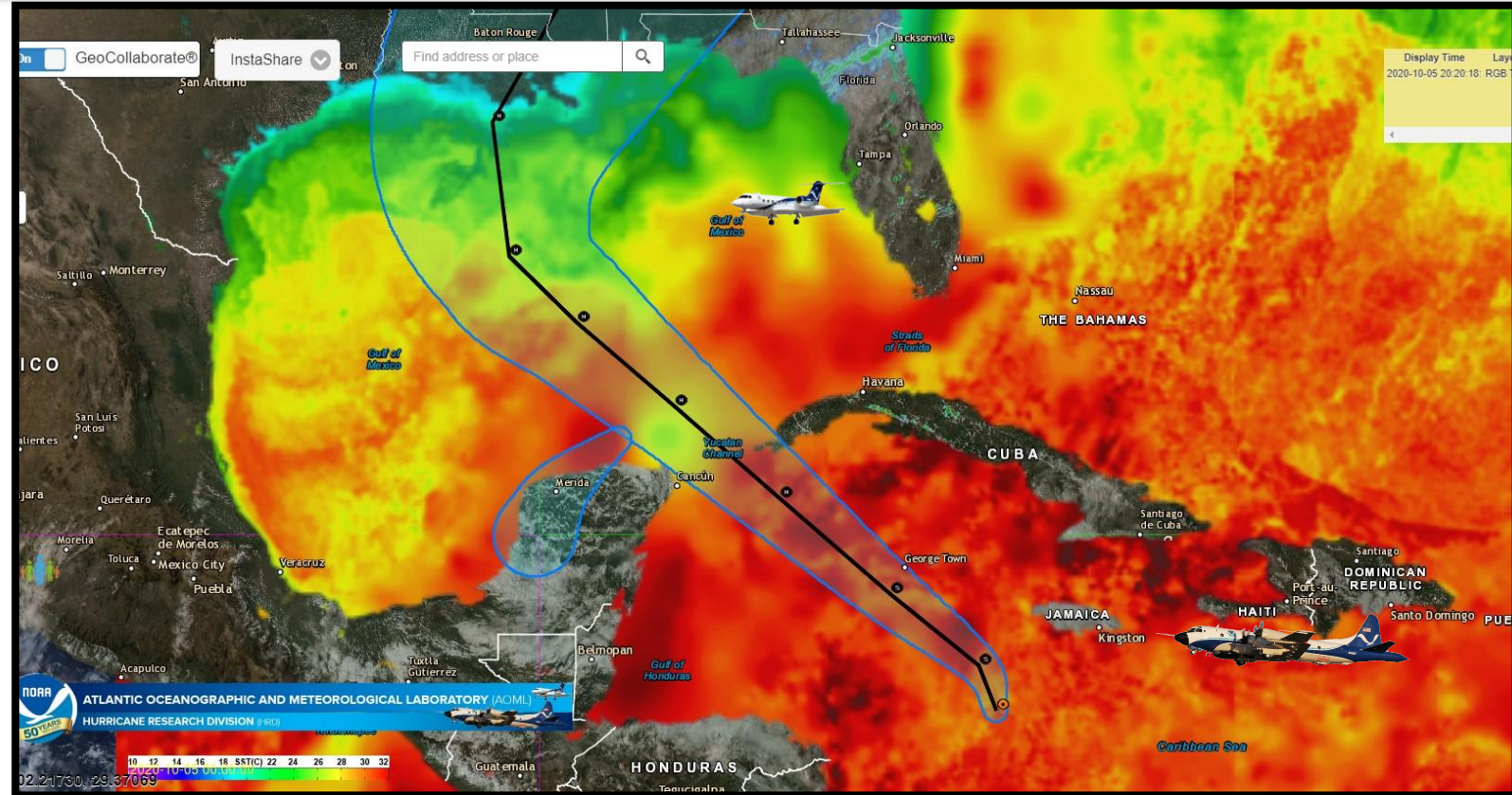
Real-Time Data Sharing and Collaboration:

Improving access to NOAA satellite data, ocean observations and science (HRD, EEOOTT, JPSS)

March 9, 2022
ICAMS TCORF



Dave Jones, CEO
StormCenter Communications, Inc
dave@stormcenter.com



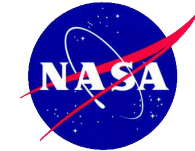
Connecting NOAA in a Real-Time Collaborative Environment

Development of the GeoCollaborate Technology

Millions Invested Through Federal Small Business Innovative Research Program (SBIR)



- (2011) Phase 1: NASA Grand Challenge Sharing Data
- (2013) Phase II: Develop Technology
- (2015) Phase IIe: Extend to all mobile devices
- (2015) Phase III: NOAA Contract



Phase III status:

Sole source contracting with any federal agency, no ceiling, no time limit

Initial contracts include NOAA (4), DHS CISA, US Census Bureau

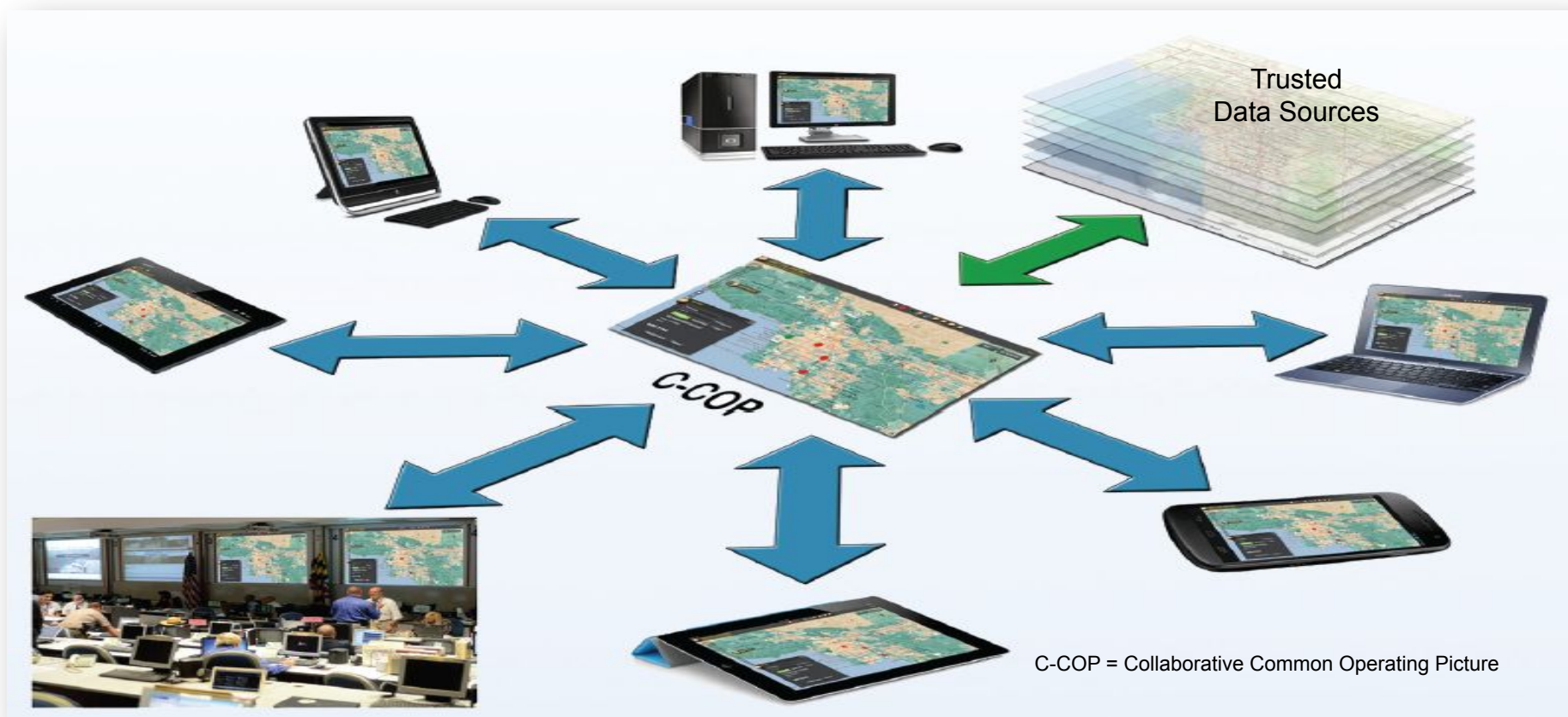
All Hazards Consortium (private sector), State of Florida



GeoCollaborate – SBIR Phase III



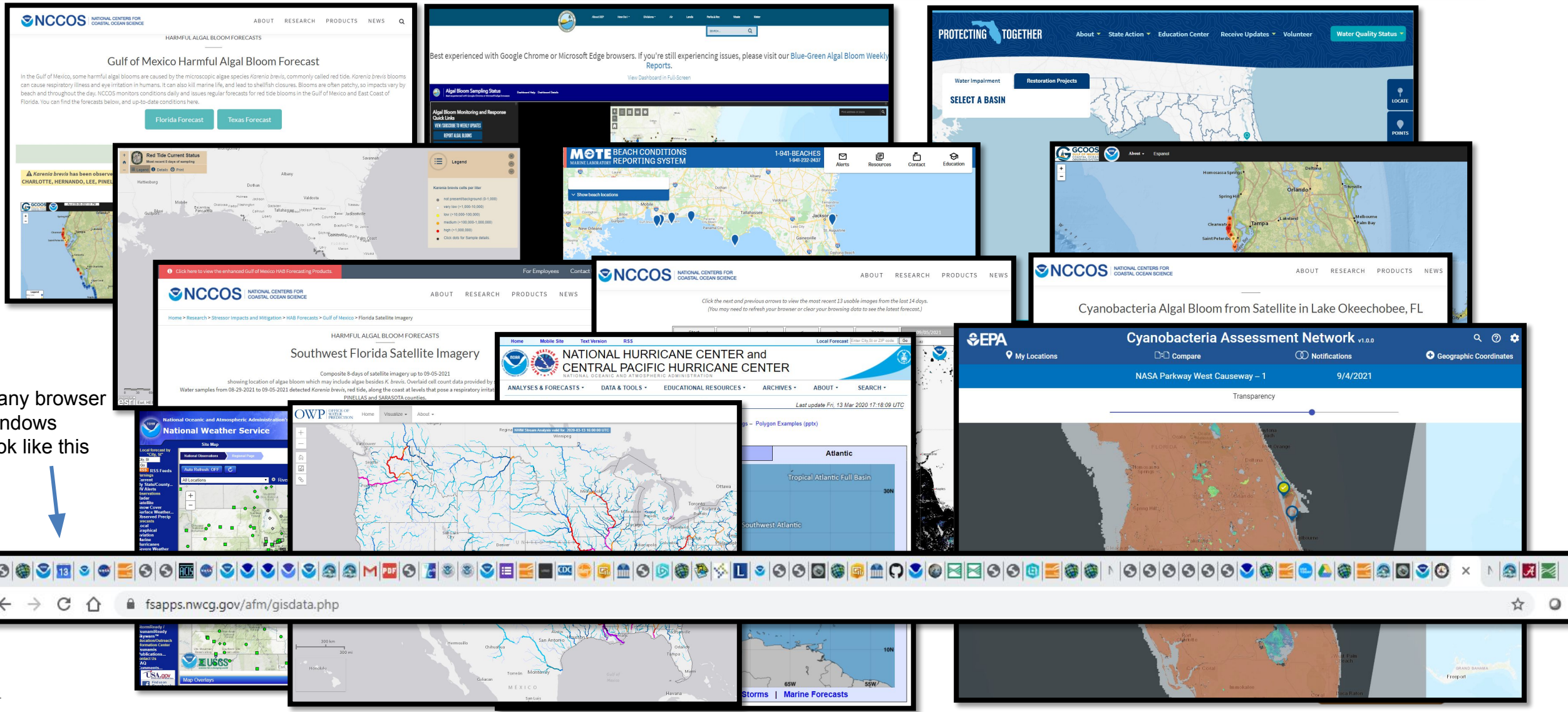
- Allows easy sharing of disparate data **across devices**, platforms in **real-time**, using low bandwidth
- Placing all participants synchronized on the **same map at the same time** (not screen sharing)
- No additional hardware footprint or installation of software needed



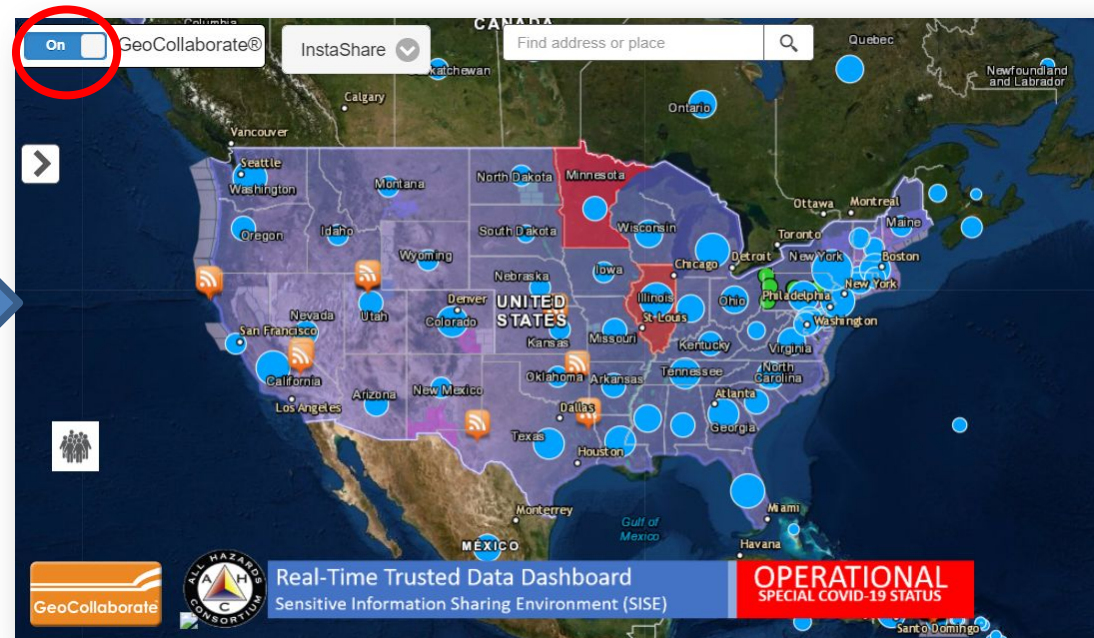
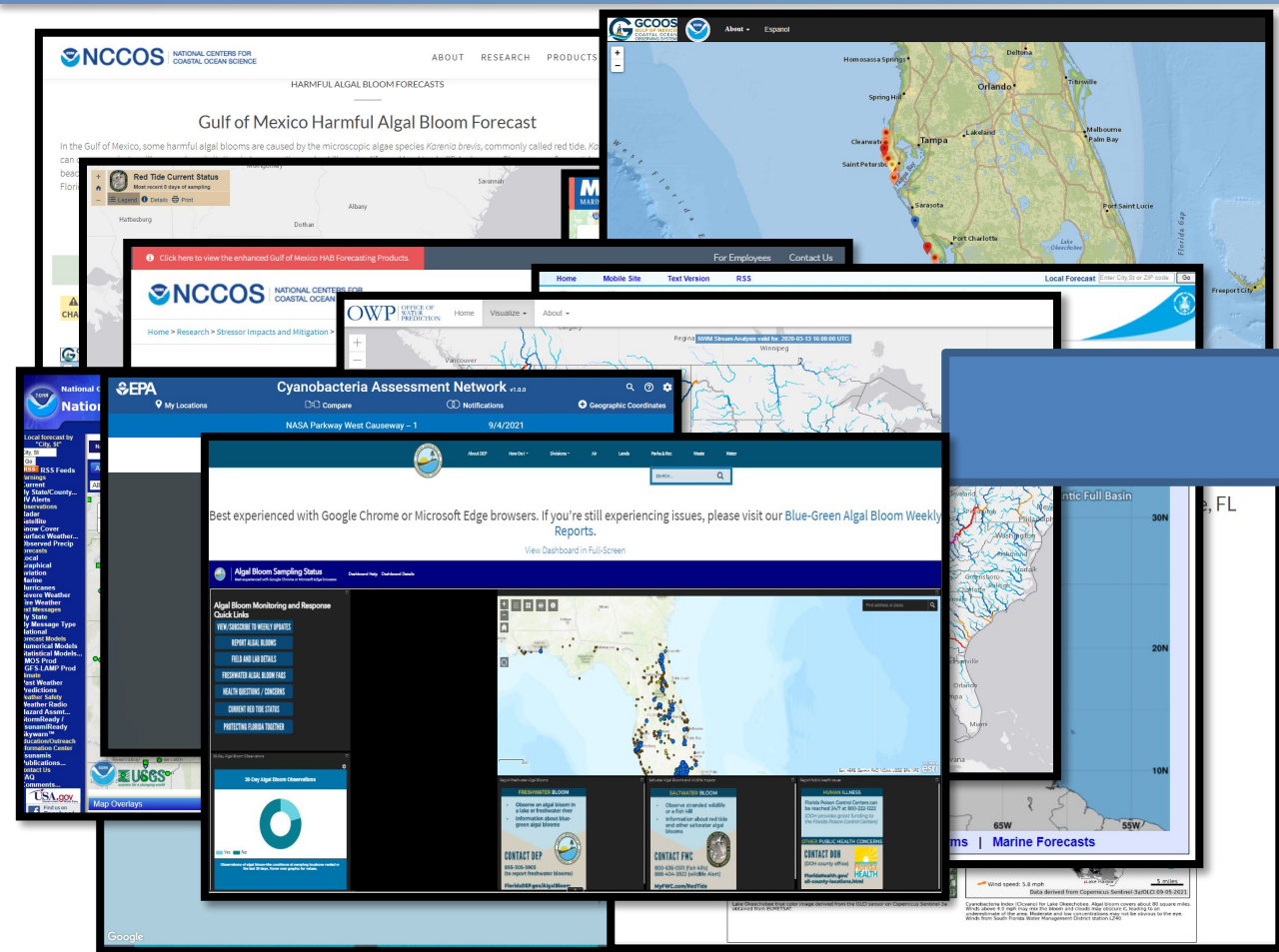
SBIR/STTR
SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER



Multitude of Portals | Hubs | Websites



Unifies Relevant Disparate Trusted Data



Simple Display controlled by ON/OFF switch

Many websites offering pieces of trusted information

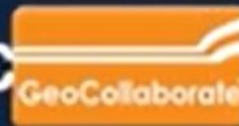
Unification of Trusted Data from Disparate Sources, in real-time, onto any map



Real-Time Cross-Platform Synchronous Collaboration

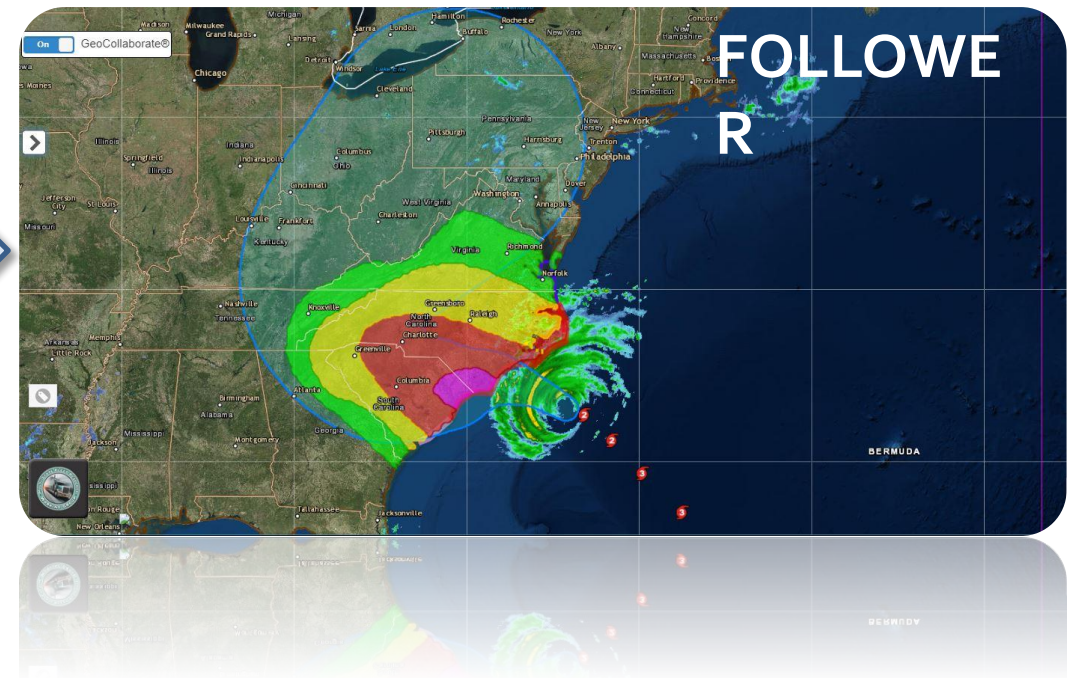
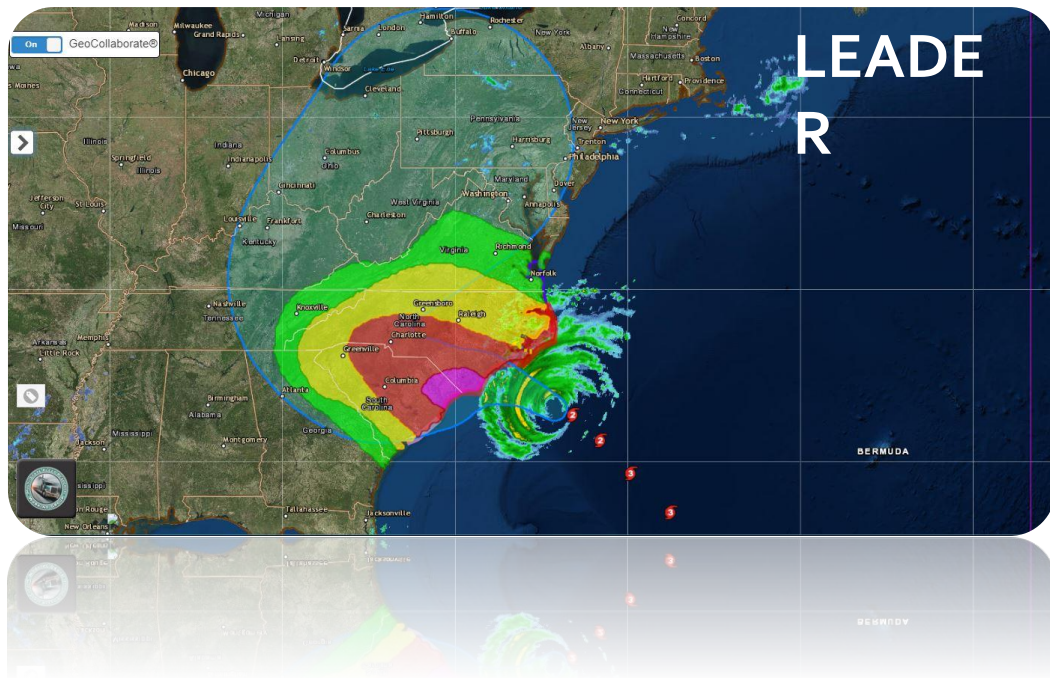


...AWARENESS...TRUSTED DATA SHARING...ACROSS



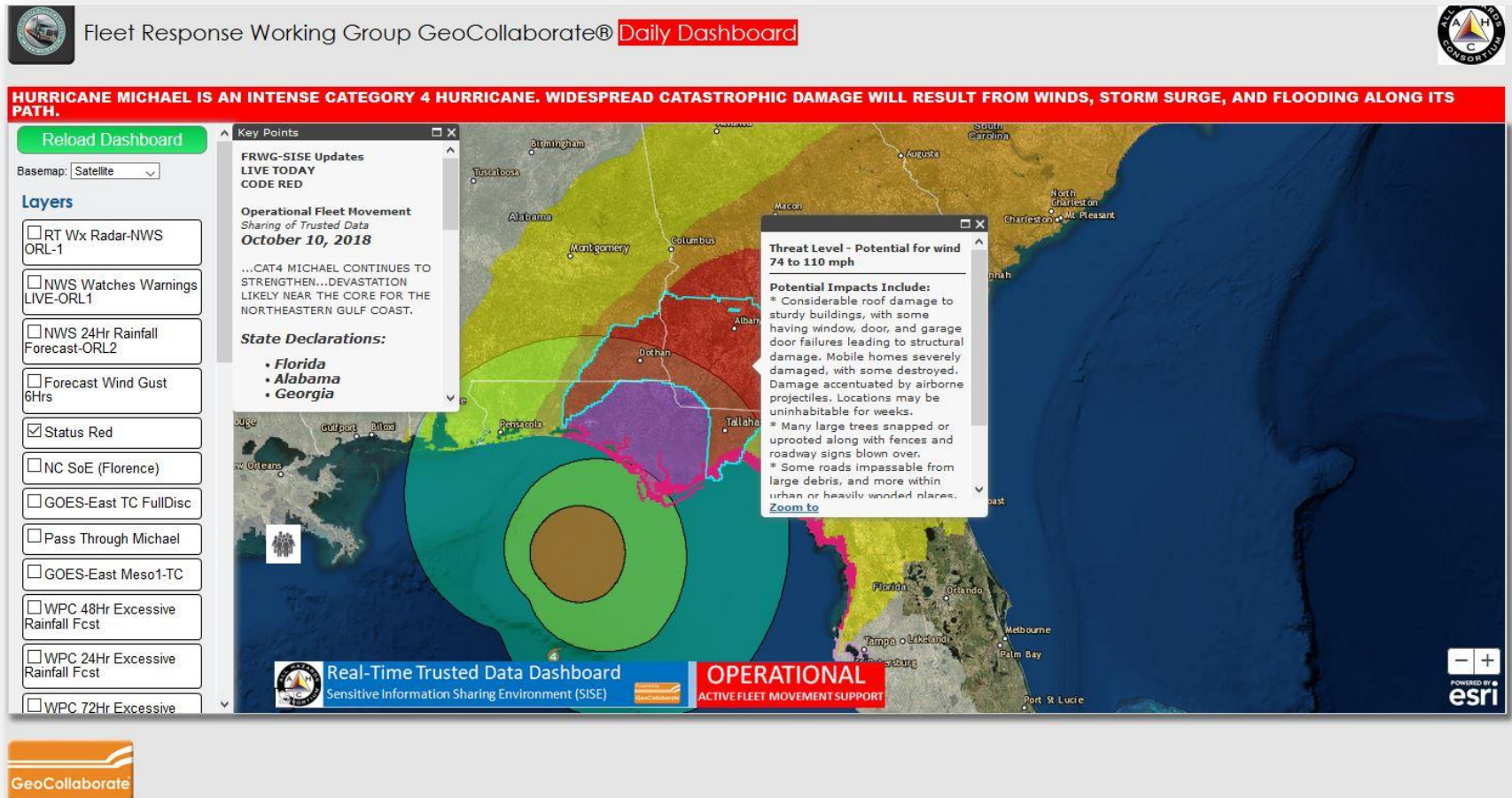
Decision makers can access trusted data and share it across any platform in real

GeoCollaborate | Putting Data to Work



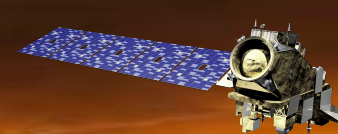
ACTIVE COLLABORATIVE SESSION

GeoCollaborate | Collaborative Dashboard



- After COLLABORATIVE session is over – all data presented is available
- Geographic location (Area of Interest) can be selected by individual user
- Data updates automatically
- Leader/expert can add relevant data
- Available 24/7/365

Current GC Use in NOAA



NOAA AOML HRD

Use Case: NOAA HURRICANE RESEARCH DIVISION
Improving Science and Knowledge Sharing through GeoCollaborate

Encourage information sharing that goes beyond text chats and includes actual data exchange, interactive drawing, key information points and a dashboard for aircraft position and plotting of data collected [Adapt & Communicate]

GeoCollaborate + Google Meet Combined

Final Flight Plan based on GeoCollaborate Live Interaction

LEAD

FOLLOW

NOAA GOMO EEOOTT

Use Case: Highlighting Ocean Observation Needs During Hurricane Season 2021

Atlantic Oceanographic and Meteorological Laboratory
GeoCollaborate Dashboard

Place 3 sail drones here

- Provide NWP with needed SST
- Provide salinity for mixing
- Improve water column profiles

NWS NWC Exercises – Flood Inundation

National Weather Service
National Water Center
GeoCollaborate Dashboard

Warwick Mall, 400 Bald Hill Rd, Warwick

Search result: Warwick Mall, 400 Bald Hill Rd, Warwick

Zoom to

Legend

Animation Control

Other Functions

NOAA JPSS

Fire & Smoke, River Ice & Flooding Initiatives
(TS & Hurricane Added 2022)

Key Points

August 5, 2021
9 New Large Fires Detected
100 Incidents
1,947,811 Acres Burned

Search result: Warner Valley

Zoom to

Legend

CA Electric Substations

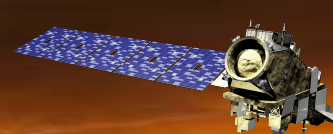
Peru National Borders

2021 USFS Fire Perimeters

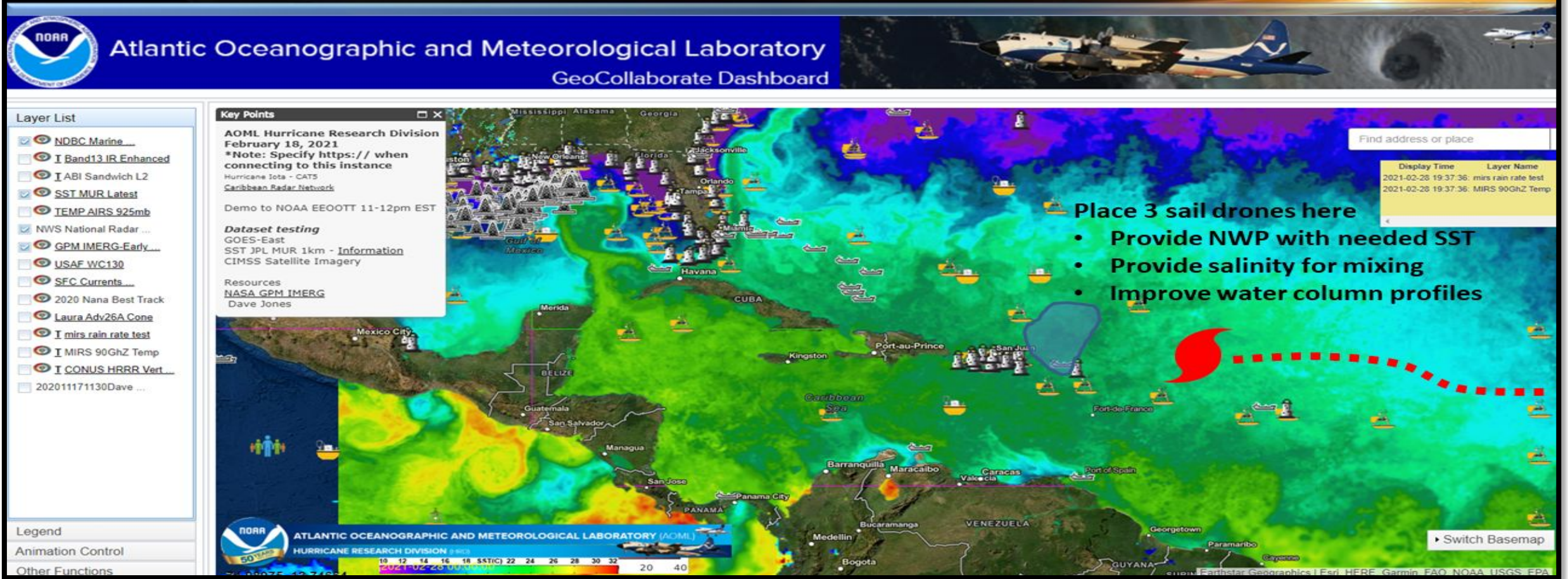
GINA

Switch Basemap

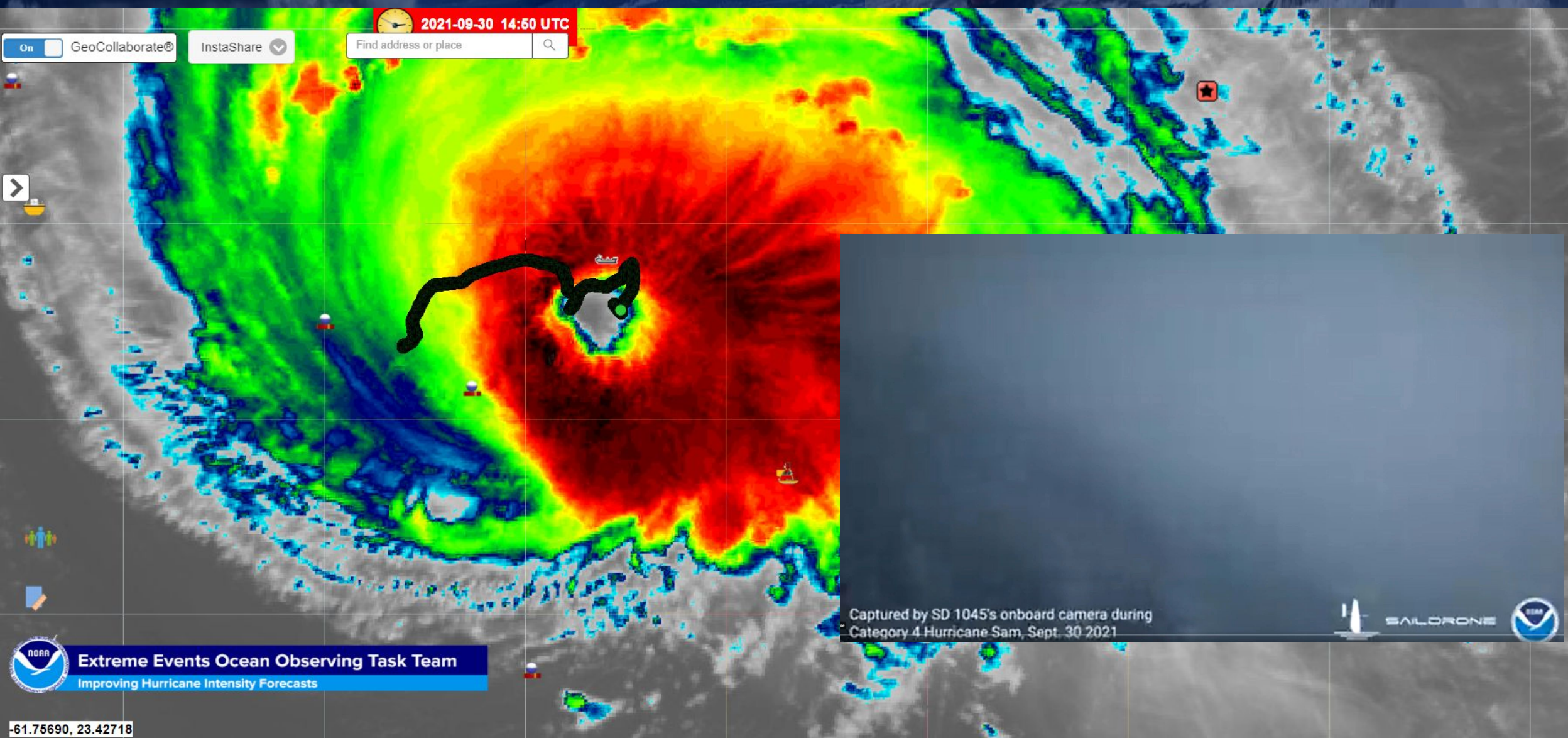
NOAA GOMO EEOOTT



Use Case: Highlighting Ocean Observation Needs During Hurricane Season 2021



Saildrone Intercepts Hurricane Sam – Sept 30, 2021




Use Case: NOAA HURRICANE RESEARCH DIVISION
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GeoCollaborate + Google Meet Combined

Final Flight Plan based on GeoCollaborate Live Interaction


Use Case: Highlighting Ocean Observation Needs During Hurricane Season 2021



National Weather Service

National Water Center

GeoCollaborate Dashboard



Layer List


- ☐ RIBL 5-Day Mar 26...
- ☐ NWM 5-Day Mar 26...
- ☒ RIBL 5-Day Mar 27...
- ☐ NWM 5-Day Mar 27...
- ☐ RIBL 5-Day Mar 28...
- ☐ NWM 5-Day Mar 28...
- ☐ RIBL 5-Day Mar 29...
- ☐ NWM 5-Day Mar 29...
- ☐ RIBL 5-Day Mar 30...
- ☐ NWM 5-Day Mar 30...
- ☐ RIBL 5-Day Mar 31...
- ☐ NWM 5-Day Mar 31...
- ☐ FEMA National Flood...
- ☒ USGS NWM
- ☒ USACE NWM
- ☐ Emergency Medical...
- ☒ RFC Forecast Points

Key Points

Rhode Island TTX

NWS Boston/Norton has issued a FFW for XYZ.

ABC road has been closed



Legend

Animation Control


Other Functions

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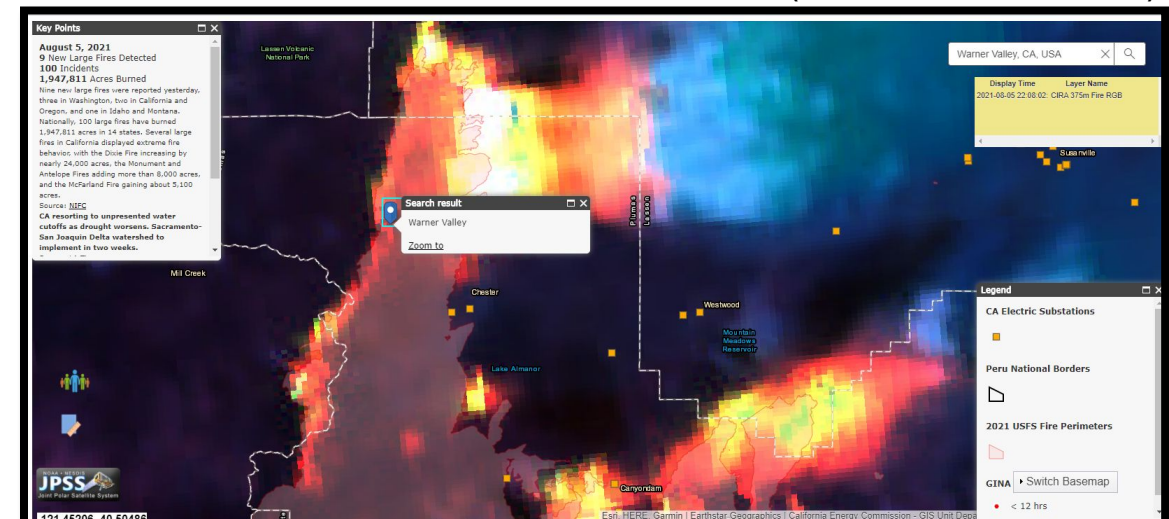


Legend

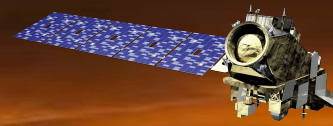
Animation Control

Other Functions

Fire & Smoke, River Ice & Flooding Initiatives (TS & Hurricane Added 2022)

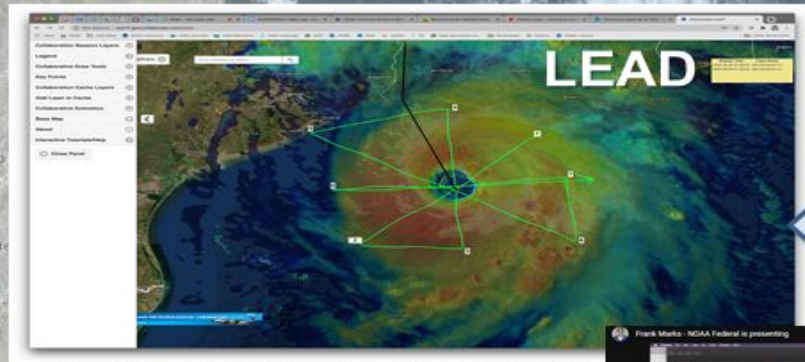


NOAA AOML HRD

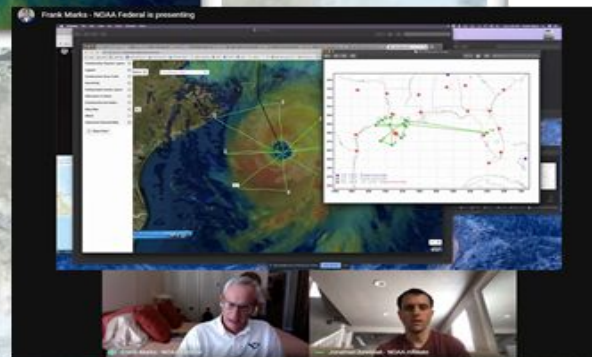


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GeoCollaborate +
Google Meet
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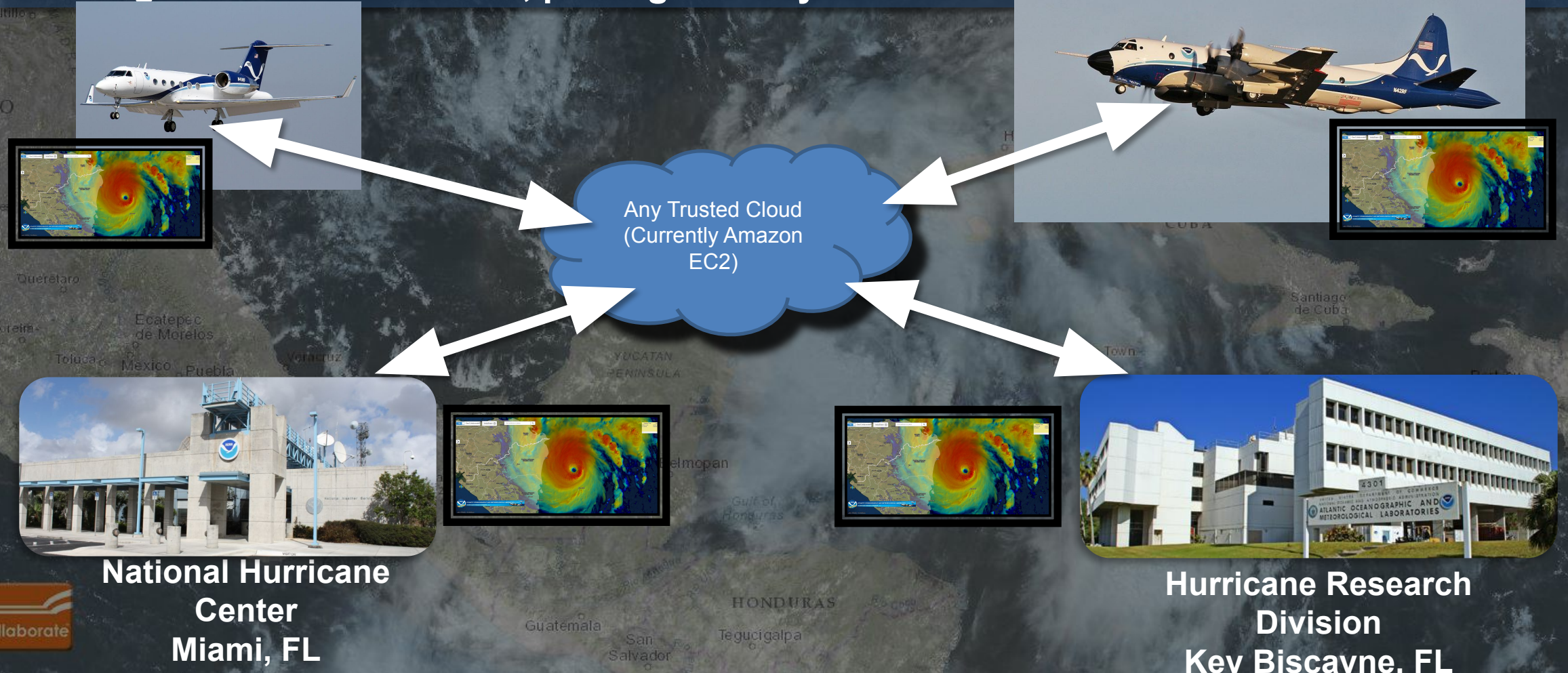


Final Flight Plan
based on
GeoCollaborate Live
Interaction

CONNECTING NHC with EEOOTT, JPSS and HRD

On GeoCollaborate®

Provide a robust data sharing environment to connect in-flight and on-the-ground HRD scientists, placing more eyeballs on the data.

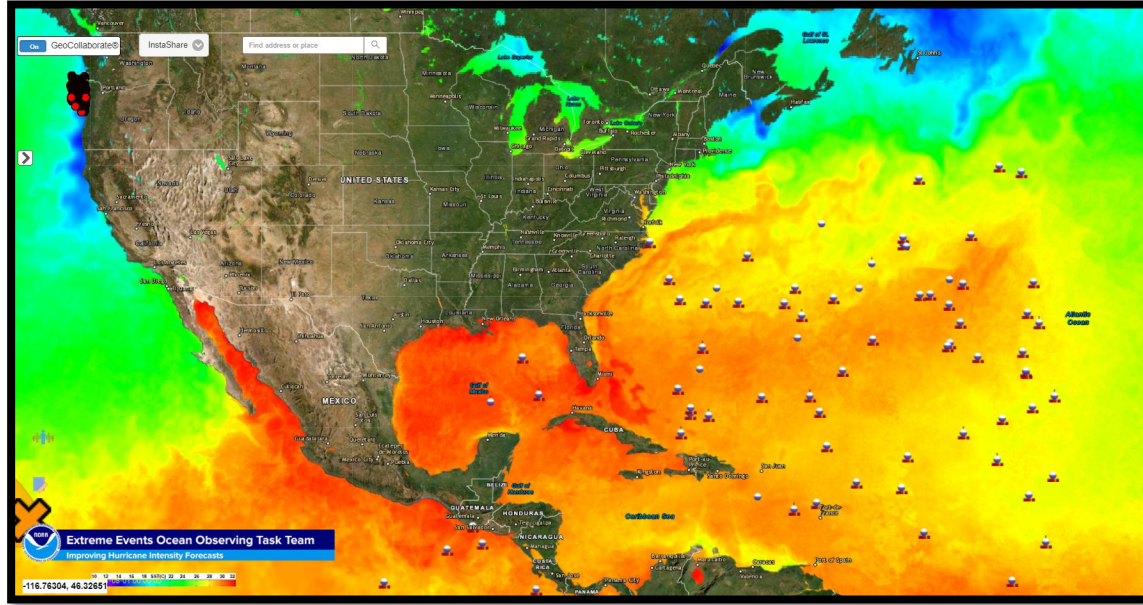


Simplified Use Case Example

Ocean observation status and plans

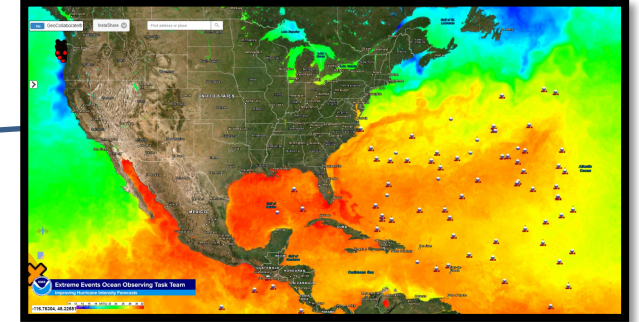
EEOOTT Lead

EEOOTT **Leading** Collaboration Session

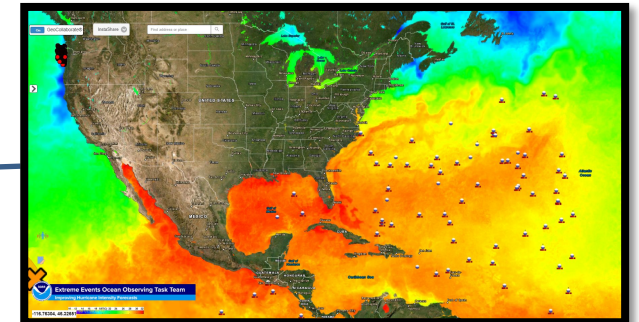


AWS

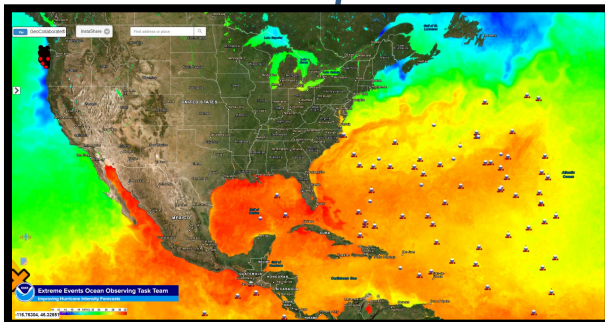
NHC



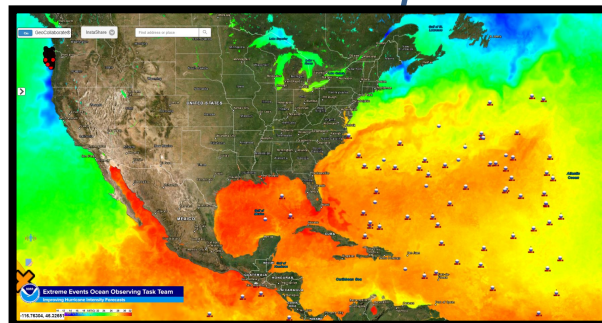
AOML/HRD



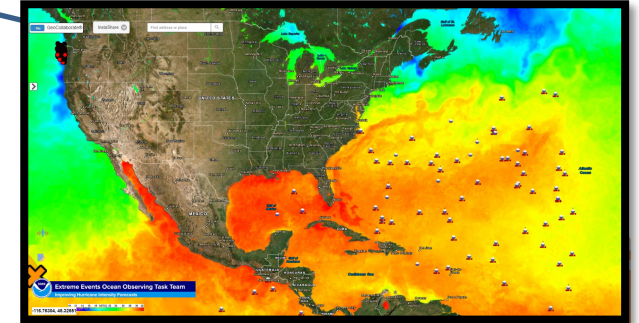
USAF



OMAO



AOC

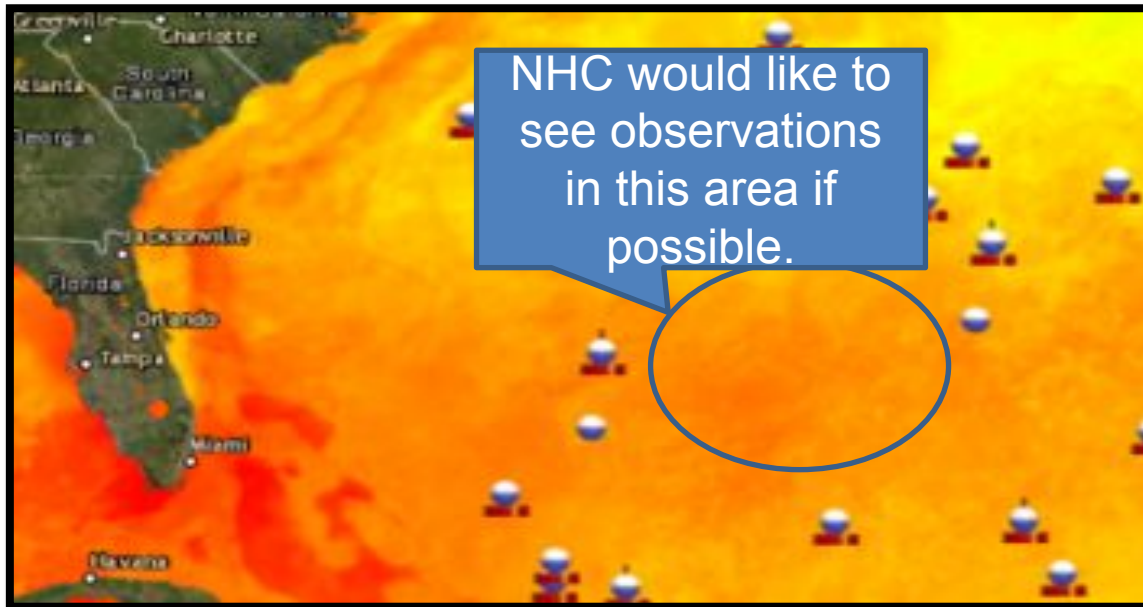


Realigning Collaboration through Data Sharing

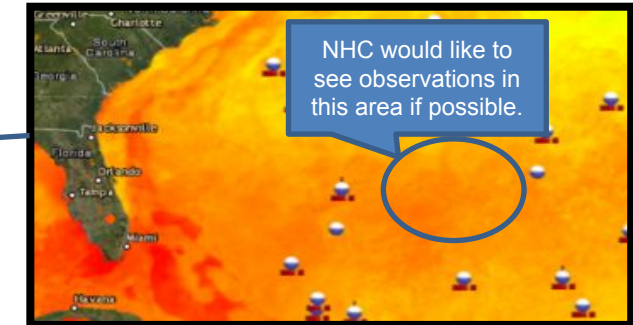
Use Case Example

NHC Lead

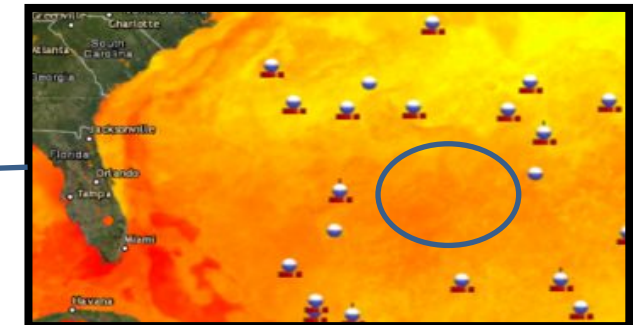
EEOOTT Following Collaboration Session



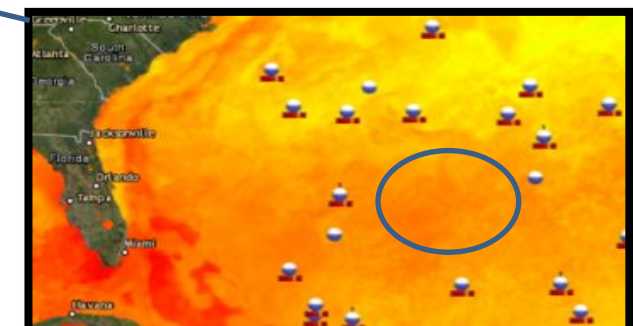
NHC Leading Collaboration Session



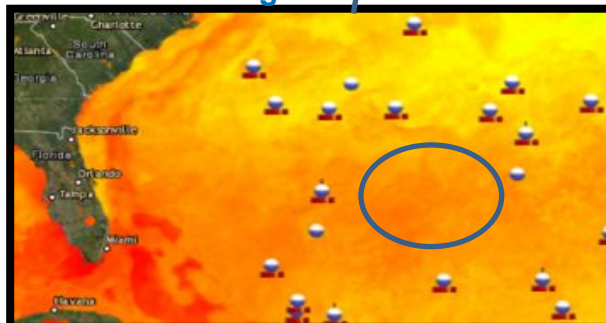
AOML/HRD Following



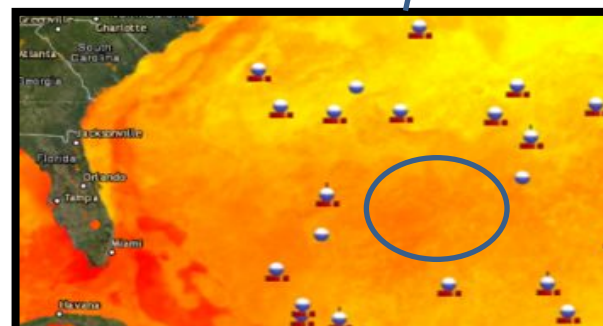
AOC Following



USAF Following



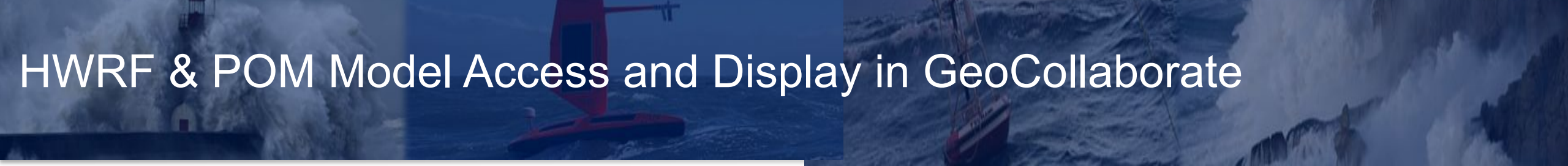
OMAO Following



AWS

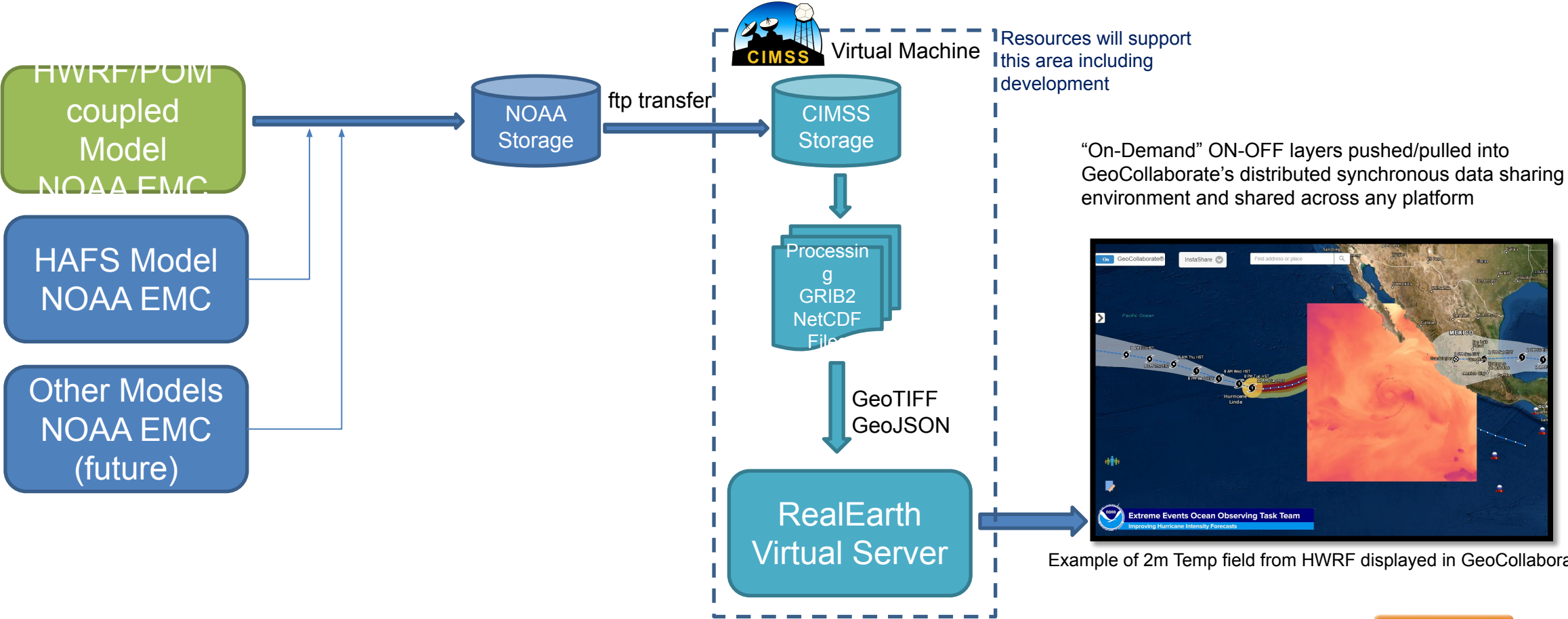
Datasets needed for GeoCollaborate – 2021 Hurricane Season

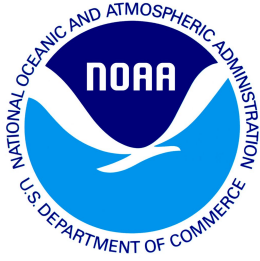
	Datasets	Location	Key Contact	Notes
✓	LDL (Drifters Scripps)	Scripps KML	Luca	SST provided in both degC/degF
✓	NOAA NODC Ocean Obs	NOAA NDBC KML direct	NODC	Observations by Owner KML
✓	NHC Official Products	NHC Web services/NowCOAST/IDP	NHC	Graphical Outlook, Track, Cone
✓	Saildrones	ERDDAP	Greg Foltz/Eugene Burger	New Saildrones now in ERDDAP, looking to see if Saildrones [1031, 1040, 1045, 1048, 1060] can be grouped together in one ERDDAP URL link Checking to see if we can get a new option for CSV production that only IDs the Latitude and Longitude as column names
✓	Gliders	ERDDAP	Scott Glenn	Add as one group? Or Individually?
✓	HRD Flight Plans (Day 1 & Day 2)	Google Drive	Jason Dunion / Jon Zawislak	Updated when research missions planned
✓	SST (High resolution) 1km MUR SST	NASA JPL PODAC (MUR 1km 4 day avg)	Peggy Le, Svetla Hristova-Velva	Produced daily for GeoCollaborate access
✓	IOOS platforms			Working on identifying web services from IOOS
✓	HWRF Model Fields	EMC GRIB2 files available for public download	HRD Hyun-Sook, EMC Zhan Zhang (Zack)	Tested 1 model field successfully (SST) Zhan Zhang (Zack) EMC-8/5/21-From the atmospheric model side: 2-m T, 2-m humidity, 10-m winds, and geopotential heights at 500 mb and 850 mb. From ocean model side: Sea surface temperature (SST), sea surface salinity (SSS) and sea surface height (SSH)
✓	XBT	Provided to GDS		No web service identified as if yet



HWRF & POM Model Access and Display in GeoCollaborate

Diagram of Process Used to Access HWRF model output in GeoCollaborate





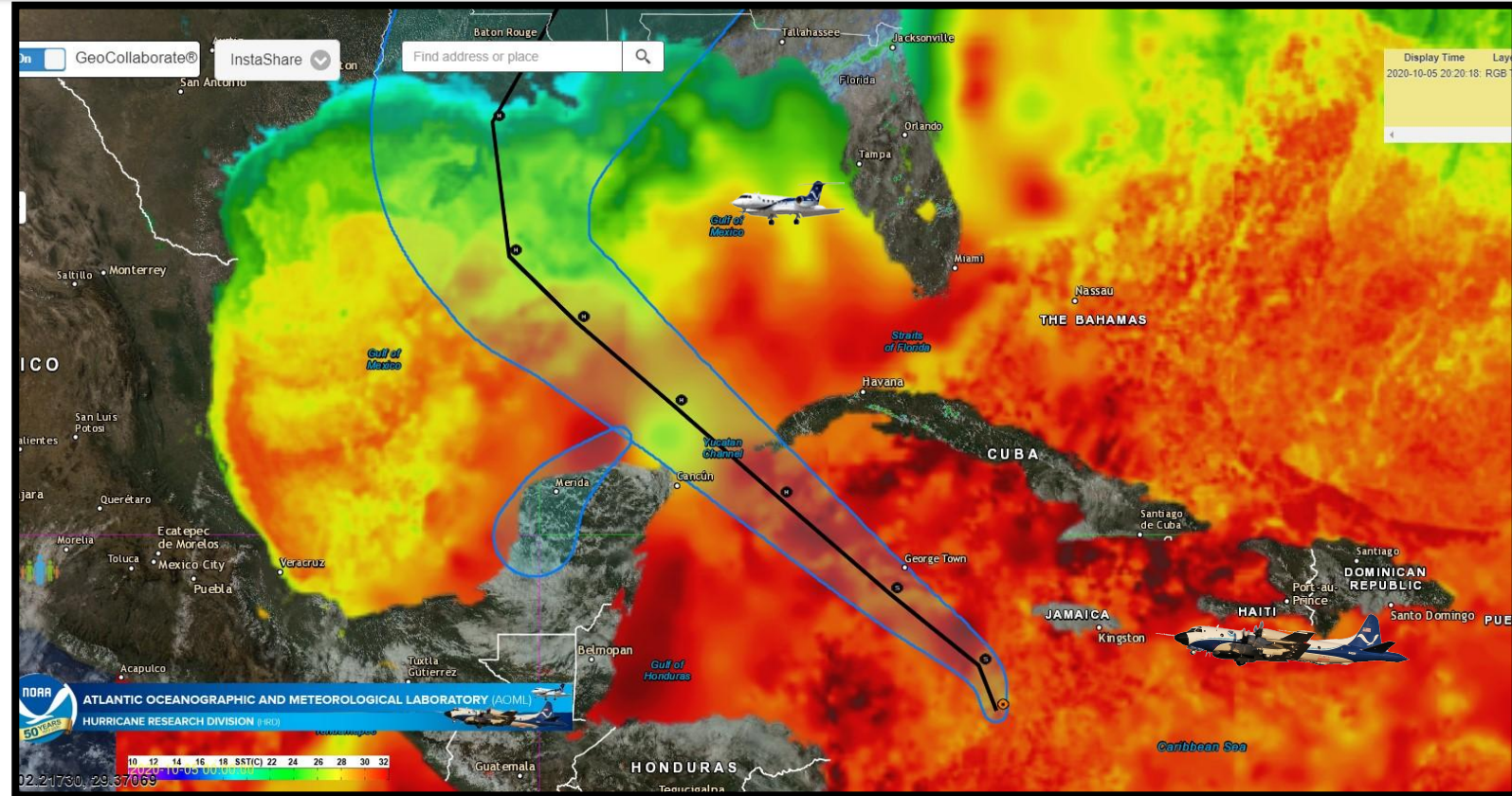
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